**AIR POLLUTION CONTROL CONSTRUCTION PERMIT**

EI FACILITY NO: 627005280 CONSTRUCTION PERMIT NO.: 12-MHR-176

TYPE:

Construction Permit for Process(es): P51, P52, P53, P151, P152, P153

In compliance with the provisions of Chapter 285, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code,

Name of Source: Atlas Resin Proppants, LLC

Street Address: N7530 County Road P,
Taylor, Jackson County, Wisconsin

Responsible Official, & Title: Erica Grant, Production Manager

is authorized to replace two wet scrubbers with recuperative thermal oxidizers described in the plans and specifications dated August 17, 2012, September 10, 2012, September 13, 2012, October 5, 2012, and October 19, 2012, October 25, 2012, October 31, 2012, November 15, 2012, December 3, 2012, December 5, 2012; and operate a resin-coated industrial sand production facility in conformity with the conditions herein. The authority to construct, modify, replace and/or reconstruct any process covered in this Construction Permit expires **August 7, 2014**. This approved period to construct, modify, replace and/or reconstruct may be extended for up to 18 months upon request for cause, prior to expiration, unless otherwise specified by this construction permit. The conditions of this construction permit are permanent and may only be revised through a revision of the construction permit or through the issuance of a new construction permit. [s. 285.60(1), Wis. Stats.]

Conditions of the construction permit and the operation permit marked with an asterisk (*) have been created outside of the Wisconsin's federally approved State Implementation Plan (SIP) and are not federally enforceable.

This authorization requires compliance by the permit holder with the emission limitations, monitoring requirements and other terms and conditions set forth in Parts I and II hereof.

Dated at Madison, Wisconsin February 7, 2013

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

By /s/ Steven D. Dunn (for JAJ)
Jeffery A. Johnson, Air Management Supervisor
West Central Region Air Program

# PART I

## A. Stack S14, Control Device C14, Process P14 — Raw Silo #1. [Constructed 2005]

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| **1.** Particulate Matter Emissions | **(1)** Emissions may not exceed 0.10 pounds per hour. [1] [ss. NR 415.05(1)(o) and 415.05(2), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>**(2)** Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 60 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 6 inches.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the horizontal flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176] | **(1)** The panel filter control device shall be in line and shall be operated at all times when the process is in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 05-JAJ-015] | **(1)** Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17. [s. NR 439.06(1), Wis. Adm. Code]<br><br>**(2)** The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 05-JAJ-015] |
| **2.** Visible Emissions | **(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and Permit # 05-JAJ-015] | **(1)** The requirements in I.A.1.b. and I.A.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and Permit # 05-JAJ-015] | **(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] |

[1] The 0.10 pounds per hour emission limit is based on 0.40 pounds of particulate per 1,000 pounds of gas, for: 56 acfm, ambient exhaust temperature, and 0.02% moisture. This emission limit is more restrictive than the allowable emission limit of 38.6 pounds per hour calculated from the process weight rate equation in s. NR 415.05(2), Wis. Adm. Code, for a process weight rate of 150 tons per hour.

**B. Stack S15, Control Device C15, Process P15 — Raw Silo #2. [Constructed 2005]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Particulate Matter Emissions | (1) Emissions may not exceed 0.10 pounds per hour. [2] [ss. NR 415.05(1)(o) and 415.05(2), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(2) Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 60 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 6 inches.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the horizontal flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176] | (1) The panel filter control device shall be in line and shall be operated at all times when the process is in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 05-JAJ-015] | (1) Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17. [s. NR 439.06(1), Wis. Adm. Code]<br><br>(2) The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 05-JAJ-015] |
| 2. Visible Emissions | (1) Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and Permit # 05-JAJ-015] | (1) The requirements in I.B.1.b. and I.B.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and Permit # 05-JAJ-015] | (1) Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] |

[2] The 0.10 pounds per hour emission limit is based on 0.40 pounds of particulate per 1,000 pounds of gas, for: 56 acfm, ambient exhaust temperature, and 0.02% moisture. This emission limit is more restrictive than the allowable emission limit of 38.6 pounds per hour calculated from the process weight rate equation in s. NR 415.05(2), Wis. Adm. Code, for a process weight rate of 150 tons per hour.

C. **Stack S22, Control Device C22, Process P22 — Raw Silo #3. [Constructed 2005]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Particulate Matter Emissions | (1) Emissions may not exceed 0.10 pounds per hour. [3] [ss. NR 415.05(1)(o) and 415.05(2), Wis. Adm. Code, and 627005280-P02]<br><br>(2) Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 60 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 6 inches.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the horizontal flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit #s 627005280-P02 and 12-MHR-176] | (1) The panel filter control device shall be in line and shall be operated at all times when the process is in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 627005280-P02] | (1) Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17. [s. NR 439.06(1), Wis. Adm. Code]<br><br>(2) The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and 627005280-P02] |
| 2. Visible Emissions | (1) Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and 627005280-P02] | (1) The requirements in I.C.1.b. and I.C.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and 627005280-P02] | (1) Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] |

[3] The 0.10 pounds per hour emission limit is based on 0.40 pounds of particulate per 1,000 pounds of gas, for: 56 acfm, ambient exhaust temperature, and 0.02% moisture. This emission limit is more restrictive than the allowable emission limit of 38.6 pounds per hour calculated from the process weight rate equation in s. NR 415.05(2), Wis. Adm. Code, for a process weight rate of 150 tons per hour.

**D. Stack S20, Control Device C20 – Processes: P13 - Elevator #1, P16 - Conveyor #2, P17 - Elevator #2, P21 - Day Tank #1, P23 - Weigh Hopper #1, P24 - Raw Material Heater, P25 - Cyclone, P27 - Elevator #3, P28 - Resin Tank, P29 - Weigh Hopper #2, P41 - Shaker Screen, P42 - Elevator #4, P43 - Scalping Screen, P44 - Product Cooler, P45 - Conveyor #3, P46 - Elevator #5, P47 - Finished Silo #1, P48 - Finished Silo #2, P49 - Weigh Belt, P71 - Finished Silo #3, and P72 - Finished Product Silo #4. [Constructed 2005, P72 constructed 2006]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Particulate Matter Emissions | (1) Emissions may not exceed 1.0 pounds per hour. [4] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and 07-JAJ-042]<br><br>(2) Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 18.5 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 2 feet 4 inches.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176]<br><br>(3) Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C20/S20 are a pollutant-specific emissions unit for particulate matter and is subject to the CAM requirements of 40 CFR, part 64. The permittee's Compliance Assurance Monitoring Plan for Baghouse C20 for PM control is included as Part III of this permit. [s. 285.65(13), Wis. Stats. 40 | (1) The baghouse control device shall be in line and shall be operated at all times when the processes are in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(2) Instrumentation to monitor the pressure drop across the baghouse control device shall be operated, calibrated, and maintained properly. [s. NR 439.055(1)(a), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(3) The pressure drop across the baghouse control device shall be maintained between 1 and 8 inches water column, or as required in the CAM Plan under Part III. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 05-JAJ-015] | (1) Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensible backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code]<br><br>(2) The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(3) The permittee shall record the pressure drop across the baghouse once for every 8 hours of operation or once per day, whichever yields the greater number of measurements. [s. NR 439.055(2)(b)1., Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(4) The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the baghouse system, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(5) The baghouse control device pressure drop monitoring device shall be maintained in accordance with the manufacturer's recommendations and shall be calibrated at least once per year. [s. NR 439.11(1)(b) and s. NR |

[4] The 1.0 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). This emission limit is more restrictive than the allowable emission limit of 10.31 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

D. **Stack S20, Control Device C20 – Processes: P13 - Elevator #1, P16 - Conveyor #2, P17 - Elevator #2, P21 - Day Tank #1, P23 - Weigh Hopper #1, P24 - Raw Material Heater, P25 - Cyclone, P27 - Elevator #3, P28 - Resin Tank, P29 - Weigh Hopper #2, P41 - Shaker Screen, P42 - Elevator #4, P43 - Scalping Screen, P44 - Product Cooler, P45 - Conveyor #3, P46 - Elevator #5, P47 - Finished Silo #1, P48 - Finished Silo #2, P49 - Weigh Belt, P71 - Finished Silo #3, and P72 - Finished Product Silo #4. [Constructed 2005, P72 constructed 2006]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | CFR 64.2 and 40 CFR 64.3(d)] | | 439.055(4), Wis. Adm. Code, and Permit # 05-JAJ-015] |
| **2.** Visible Emissions | **(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and Permit # 05-JAJ-015] | **(1)** The requirements in I.D.1.b. and I.D.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and Permit # 05-JAJ-015] | **(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] |
| **3.** Hazardous Air Pollutants Regulated by the Clean Air Act: NESHAP for Industrial, Commercial and Institutional Boilers and | **(1)** Except as specified in I.D.3.a.(2) below, the permittee shall comply with the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Sources, as applicable.[5] [s. 285.65(13), Wis. Adm. Code, 40 CFR, Part 63, Subpart DDDDD]<br><br>**(2)** The permittee shall not be affected by the requirements specified in I.D.3.a.(1) above beginning on the date when Control Devices C51 | | **(1)** The permittee shall keep and maintain the dates when each Control Device C51 and C151 becomes operational. [s. NR 439.04(1)(d), Permit # 12-MHR-176] |

[5] The permittee will be required to comply with all applicable requirements by the established compliance dates. On March 21, 2011, an amended version of EPA's National Emission Standard for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Sources, was published as a final rule in the Federal Register (40 CFR Part 63, subpart DDDDD). That amended version of the rule was published as a final rule in the Federal Register on February 1, 2013. Under the amended rule, natural gas, raw material heater P24 is a "process heaters" per the definition in 40 CFR s. 63.7575. Because this process heater was constructed prior to June 4, 2010, it is considered existing affected sources, pursuant to 40 CFR s. 63.7490(d). The heater burns natural gas and is included in the boiler and process heater subcategory "units designed to burn natural gas, refinery gas or other gas 1 fuels" in 40 CFR s. 63.74999(l). Process heater P24 has a heat input capacity less than 10 million Btu per hour (rated at 6.0 million Btu per hour), As an existing affected source it is required to comply with the requirements of 40 CFR Part 63, subpart DDDDD of the amended rule no later than March 21,2016, pursuant to 40 CFR s. 63.7495(b).

When Control Devices C51 and C151 become operational, the permittee shall no longer be affected by 40 CFR Part 63, subpart DDDDD, and 40 CFR Part 63, subpart JJJJJJ does not affect process heaters.

**D. Stack S20, Control Device C20 – Processes: P13 - Elevator #1, P16 - Conveyor #2, P17 - Elevator #2, P21 - Day Tank #1, P23 - Weigh Hopper #1, P24 - Raw Material Heater, P25 - Cyclone, P27 - Elevator #3, P28 - Resin Tank, P29 - Weigh Hopper #2, P41 - Shaker Screen, P42 - Elevator #4, P43 - Scalping Screen, P44 - Product Cooler, P45 - Conveyor #3, P46 - Elevator #5, P47 - Finished Silo #1, P48 - Finished Silo #2, P49 - Weigh Belt, P71 - Finished Silo #3, and P72 - Finished Product Silo #4. [Constructed 2005, P72 constructed 2006]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| Process Heaters at Major Sources (40 CFR, Part 63, Subpart DDDDD)<br><br>Hazardous Air Pollutants Regulated by the Clean Air Act: NESHAP for Industrial, Commercial and Institutional Boilers at Area Sources (40 CFR, Part 63, Subpart JJJJJJ) | and C151 become operational. [40 CFR, Part 63, Subpart JJJJJJ, Permit # 12-MHR-176] | | |

**E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [before initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Particulate Matter Emissions | (1) Emissions may not exceed 1.5 pounds per hour. [6] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(2) Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 90 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 2 feet 6 inches.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176] | (1) The wet scrubber control device, including demister, shall be in line and shall be operated at all times when any Process P51, P52, and/or P53 is in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(2) Instrumentation to monitor the pressure drop across the wet scrubber and demister, in inches of water column, shall be operated, calibrated, and maintained properly. [s. NR 439.055(1)(e), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(3) To verify wet scrubber liquor flow, the permittee shall do one of the following:<br>(a) Operate, calibrate, and maintain instrumentation to monitor the wet scrubber liquor flow rate, in gallons per minute [s. NR 439.055(1)(e), Wis. Adm. Code and Permit # 05-JAJ-015]; or<br>(b) Conduct visual inspections of the scrubber liquor pump flow to confirm return flow of scrubber liquor to sludge tank and monitor and record the motor power of the scrubber liquor recirculation pump.<br>[s. 285.65(4), Wis. Stats. and s. NR 407.09(4), Wis. Adm. Code]<br><br>(4) Instrumentation and laboratory techniques[7] to monitor the pH of the wet scrubber absorbing fluid | (1) Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensable backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code]<br><br>(2) The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(3) The permittee shall measure and record the following operational variables once for every 8 hours of operation or once per day, whichever yields the greater number of measurements:<br>(a) Pressure drop across the wet scrubber and demister, in inches of water column,<br>(b) pH of the absorption scrubbing fluid,<br>(c) Either:<br>(c)(i) Flow of liquor, in gallons per minute; OR<br>(c)(ii) Motor power of the scrubber liquor recirculation pump, and the results of the visual inspections required by |

[6] The 1.5 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). This emission limit is more restrictive than the allowable emission limit of 5.18 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

[7] Atlas takes samples from the sludge tank manually and the pH of the samples are measured in the laboratory.

**E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [before initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | shall be utilized properly. [s. NR 439.055(1)(f), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>**(5)** The pressure drop across the wet scrubber and demister shall be maintained between 8 and 17 inches water column, or an alternative range approved in writing by the Department. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 05-JAJ-015] | I.E.1.b.(3)(b), including the date, time, and name or initials of the individual performing the inspection. [s. NR 439.055(2)(b), Wis. Adm. Code, and s. 285.65(4), Wis. Stats., and Permit # 05-JAJ-015]<br><br>**(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the wet scrubber system, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>**(5)** The wet scrubber pressure drop, liquor flow, and pH monitoring devices shall be maintained in accordance with the manufacturer's recommendations and shall be calibrated at least once per year. [s. NR 439.11(1)(b) and s. NR 439.055(4), Wis. Adm. Code, and Permit # 05-JAJ-015] |
| **2.** Visible Emissions | **(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and Permit # 05-JAJ-015] | **(1)** The requirements in I.E.1.b. and I.E.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and Permit # 05-JAJ-015] | **(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] |
| **3.** Volatile Organic Compounds | **(1)** Latest Available Control Techniques and operating practices demonstrating best current technology (LACT). The permittee has demonstrated that 85% control of VOC emissions leaving the wet scrubber is technologically infeasible for the process line, and so shall use LACT. LACT is | **(1)** The facility shall operate the wet scrubber at all times the processes are operating. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>**(2)** As required under I.E.1.b.(2)-(4).<br><br>**(3)** The pressure drop across the wet scrubber and demister, the liquor flow rate, and the pH of the | **(1)** Whenever VOC compliance testing is required, USEPA Method 18, 25 or 25A, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(3), Wis. Adm. Code, and Permit # 05-JAJ-015] |

**E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [before initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | defined as the following process operation practices and limitations:<br>(a) The facility shall operate the wet scrubber at all times processes P51, P52, and P53 are operational, with monitoring of parameters: pressure differential, liquor flow rate, and pH of the scrubbing fluid.<br>(b) The wet scrubber shall achieve one of the following:<br>(b)(i) An overall control efficiency of 64% for VOC emissions, or<br>(b)(ii) VOC emission rate no greater than 10.6 pounds per hour.<br>[s. NR 424.03(2)(c), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>**(2)** Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C50/S50 are a pollutant-specific emissions unit for volatile organic compounds and is subject to the CAM requirements of 40 CFR, part 64. The permittee's Compliance Assurance Monitoring Plan for Scrubber C50 for volatile organic compound control is included as Part III of this permit. [s. 285.65(13), Wis. Stats. 40 CFR 64.2 and 40 CFR 64.3(d)] | scrubbing fluid shall be maintained per manufacturer specifications, the most recent compliance test, the malfunction prevention and abatement plan required under I.ZZZ.1., or the CAM plan required under Part III to meet the requirements under I.E.3.a.(1) and I.E.1.a.(1). [s. NR 419.03(1), Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and Permit # 05-JAJ-015] | **(2)** As required under I.E.1.c.(3)-(5).<br><br>**(3)** The permittee shall inspect the circulation pump and packing of the wet scrubber monthly. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>**(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the wet scrubber, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 05-JAJ-015] |
| **4.** Phenol Emissions | **(1)** The processes may not emit more than 1,583 pounds of phenol | **(1)** Each calendar month, the permittee shall calculate the phenol emissions from this stack as | **(1)** Whenever Phenol compliance testing is required, NIOSH Method 2546, or another |

E. **Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [before initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | per month, based on a 12-month rolling average (9.5 tons per year). [s. 285.65(7), Wis. Stats., and 07-JAJ-042-R1]<br><br>**(2)** The free phenol content of the resin may not exceed 1.5%, by weight. [s. 285.65(7), Wis. Stats., and Permit # 05-JAJ-015]<br><br>**(3)** The wet scrubber shall achieve one of the following:<br>(a) An overall control efficiency of 64% for VOC emissions, as required under I.E.3.a.(1)(b)(i),<br>(b) An overall control efficiency of 54.5% for phenol emissions, or<br>(c) A maximum emission rate of 2.8 lbs/hr.[8]<br>[s. 285.65(7), Wis. Stats., Permit # 05-JAJ-015 and 627005280-P02] | follows. This calculation shall be performed within 15 calendar days of the end of each month. [s. NR 407.09(4)(a), Wis. Adm. Code and Permit # 05-JAJ-015-R1]<br><br>$E_{phenol} = \sum[(EF_i \times Z_i) \times (1-C_{eff})$<br><br>where,<br>$E_{phenol}$ is the monthly phenol emissions in pounds per month;<br>$EF_i$ is an emission factor of the amount of phenol emitted per pound of each resin "i" used (lbs-phenol/lb resin)[9];<br>$Z_i$ is the amount of resin "i" used in pounds per month; and<br>$C_{eff}$ is the efficiency of any control device controlling phenol emissions.[10]<br><br>**(2)** To demonstrate compliance with condition I.E.4.a.(1), the permittee shall calculate the average phenol emissions from the facility over each 12 consecutive month period by summing the monthly phenol emissions as calculated in I.E.4.b.(1) for each consecutive 12 month period and dividing by 12. This calculation shall be performed within 15 calendar days of the end of each month for the previous 12 consecutive month period. [s. NR 407.09(4)(a)1., Wis. Adm. Code and Permit # 05-JAJ-015-R1]<br><br>**(3)** As required under I.E.3.b.(3). | method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>**(2)** The permittee shall maintain records of the following:<br>(a) The total amount of each resin used in pounds per month ($Z_i$);<br>(b) The monthly phenol emission rate in pounds per month ($E_{phenol}$) as calculated in I.E.4.b.(1);<br>(c) The 12-month rolling average phenol emission rate for each consecutive 12 month period, as calculated in I.E.4.b.(2); and<br>(d) Material safety data sheets or other technical documents which show the free phenol content of each resin used.<br>[s. NR 407.09(4)(a)1., Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and Permit # 05-JAJ-015]<br><br>**(3)** As required under I.E.1.c.(3). |

[8] This emission limitation established under 627005280-P02, along with current limits under (1) – (3) will keep potential emissions of phenol to <10 TPY (9.5 TPY).
[9] At the time of permit issuance, two types of resins are used, novalac and resol. The emissions factor for novalac resin ($EF_{novalac}$) is 0.0059 lbs-phenol/lb novalac resin. The emission factor for resol resin ($E_{resol}$) is 0.0012 lbs-phenol/lb resol resin. The permittee may use alternate emission factors if approved by the department in writing.
[10] At the time of permit issuance $C_{eff}$ is 54.5 percent as established by stack testing conducted in June 2006. The permittee may use a $C_{eff}$ as determined during the most recent phenol compliance emission test, and as approved by the department in writing.

**E´. Stack S50, Control Device C51 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [after initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Particulate Matter Emissions (PM, PM-10 and PM-2.5) | (1) Emissions of each pollutant PM, PM-10, and PM-2.5 may not exceed 1.50 pounds per hour. [11] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176]<br><br>(2) Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 92 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 2.47 feet.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit # 12-MHR-176] | (1) The recuperative thermal oxidizer (Control Device C51) shall be in line and shall be operated at all times when any Process P51 and/or P52 is in operation. [ss. NR 406.10 and 407.09(4)(a)1., Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>(2) The permittee shall operate, calibrate, and maintain a device to monitor and record the temperature within the combustion chamber, in degrees Fahrenheit or Celsius (centigrade). The permittee shall record the temperature automatically every 15 minutes whenever any Process P51 and/or P52 is operating. [s. NR 439.055(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>(3) Each temperature monitoring device shall be accurate to within ± 0.5% of the temperature being measured in degrees Fahrenheit or within ± 5° F of the temperature being measured, or the equivalent in degrees Celsius (centigrade), whichever is greater. [s. NR 439.055(3)(a), Wis., Adm. Code, Permit # 12-MHR-176]<br><br>(4) The temperature within the combustion chamber shall be no less than 1,400 degrees Fahrenheit, or at or above the minimum temperature from the most recent stack test that shows compliance with the emission limits specified in I.E´.1.a.(1)., I.E´.3.a.(1), I.E´.4.a.(1), I.E´.5.a.(1) and I.E´.6.a.(1); or an alternative level | (1) Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensible backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code and Permit #s 05-JAJ-015 and 12-MHR-176]<br><br>(2) Reference Test Method for PM-10 and PM-2.5 Emissions: Whenever PM-10 and/or PM-2.5 emission testing is required, the permittee shall use<br>**(a)** The methods specified in (1) above, or<br>**(b)** U.S. EPA Method 201A and US EPA Method 202 for condensable particulates.<br>[s. NR 439.06(1)-(1m), Wis. Adm. Code and Permit # 12-MHR-176]<br><br>(3) The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176]<br><br>(4) The permittee shall monitor and record the temperature within the combustion chamber every 15 minutes. [s. NR 439.055(2)(a), Wis. Adm. Code, and s. |

[11] The 1.50 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). That emission limit is more restrictive than the allowable emission limit of 5.18 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

**E´. Stack S50, Control Device C51 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [after initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | approved in writing by the Department. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>**(5)** The permittee shall perform annual inspections of the recuperative thermal oxidizer and perform maintenance and repairs as necessary. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(6)** The permittee shall conduct PM-10 emission testing on Stack S50 or S150 at the times specified below to demonstrate compliance with the emission limit specified in I.E´.1.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. NR 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | 285.65(4), Wis. Stats., and Permit #12-MHR-176]<br><br>**(5)** The permittee shall keep and maintain the following<br>(a) the date when Control Device C51 became operational,<br>(b) records of all inspections, checks and any maintenance or repairs performed on the oxidizer system, containing the date of the action, initials of inspector, and the results,<br>(c) copies of emission testing results,<br>(d) records of the calibration, inspection, maintenance, and repair activities conducted on the temperature monitoring devices, and<br>(e) oxidizer combustion chamber temperature records.<br>[s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176] |
| **2.** Visible Emissions | **(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and Permit # 05-JAJ-015] | **(1)** The requirements in I.E´.1.b. and I.E´.1.c. shall be used to demonstrate compliance with the visible emissions limit. [ss. NR 406.10 and 407.09(4)(a)3.b., Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176]<br><br>**(2)** The permittee shall conduct emission testing on Stack S50 or S150 at the times specified below to demonstrate compliance with the emission limit specified in I.E´2.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department. | **(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>**(2)** The permittee shall keep and maintain copies of emission testing results. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176] |

**E´. Stack S50, Control Device C51 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [after initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | [s. 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | |
| **3.** Volatile Organic Compounds | **(1)** Emissions may not exceed 3.35 pound per hour. [s. NR 424.03(2)(b), Wis. Adm. Code, Permit # 12-MHR-176]<br><br>NOTE: This limit reflects 85% control of VOC emissions, as required by s. NR 424.03(2)(b), Wis. Adm. Code<br><br>**(2)** The permittee shall vent emissions generated from each Process P51 and P52 to the recuperative thermal oxidizer (Control Device C51) and operate Control Device C51 so that it controls at least 85% of VOC emissions (on an overall control efficiency basis). [s. NR 424.03(2)(b), Wis. Adm. Code, Permit # 12-MHR-176]<br><br>(3) Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C51/S50 is subject to the CAM requirements of 40 CFR, part 64. The permittee's Compliance Assurance Monitoring Plan for Control Device C51 is included as Part III of this permit. [s. 285.65(13), Wis. Stats. 40 CFR 64.2 and 40 CFR 64.3(d)] | **(1)** The recuperative thermal oxidizer shall be in line and shall be operated at all times when any Process P51 and/or P52 is in operation. [ss. NR 406.10 and 407.09(4)(a)1., Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>**(2)** As required under I.E´.1.b.(2)-(5).<br><br>**(3)** The permittee shall conduct emission testing on Stack S50 at the times specified below to demonstrate compliance with the emission limits specified in I.E´.3.a.(1)-(2):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | **(1)** Whenever VOC compliance testing is required, USEPA Method 18, 25 or 25A, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(3), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>**(2)** Whenever compliance testing is required to determine the overall VOC control efficiency of the regenerative thermal oxidizer, the permittee shall<br><br>(a) use USEPA Method 18 or 25A to determine the destruction efficiency of that control device, and<br>(b) use USEPA Method 204, 204A, 204B, 204C, 204D, 204E., or 204F in 40 CFR part 51 Appendix M, or the data quality objective method or lower confidence method in 40 CFR part 63 subpart KK, Appendix A to determine the VOC capture efficiency of that control device<br>[s. NR 439.06(3)(a)-(am), Wis. Adm. Code]<br><br>**(3)** As required under I.E´.1.c.(3)-(5).<br><br>**(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the oxidizer, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176] |

**E´. Stack S50, Control Device C51 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [after initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | | **(5)** The permittee shall keep and maintain copies of emission testing results. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176] |
| **4.** Phenol Emissions | **(1)** Emissions may not exceed 0.9 pound per hour. [12] [s. 285.65(7), Wis. Stats., Permit # 12-MHR-176] | **(1)** As required under I.E´.3.b.(1) – (2).<br><br>**(2)** The permittee shall conduct emission testing on Stack S50 at the times specified below to demonstrate compliance with the emission limit specified in I.E´.4.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | **(1)** Whenever Phenol compliance testing is required, NIOSH Method 2546, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>**(2)** As required under I.E´.1.c.(3)-(5). |
| **5.** Ammonia Emissions | **(1)** Emissions may not exceed 15.9 pound per hour. [13] [s. NR 445.08(2)(b), Wis. Adm. Code, Permit # 12-MHR-176] | **(1)** As required under I.E´.3.b.(1) – (2).<br><br>**(2)** The permittee shall conduct emission testing on Stack S50 at the times specified below to demonstrate compliance with the emission limit specified in I.E´.5.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | **(1)** Reference Test Method for Ammonia Emissions: Whenever ammonia emission testing is required, the permittee shall use U.S. EPA Method 206 (a.k.a. CTM-207) or other appropriate test method approved by the department in writing. [s. NR 439.06(8), Wis. Adm. Code and Permit # 12-MHR-176]<br><br>**(2)** As required under I.E´.1.c.(3)-(5). |

[12] The permittee proposed to limit phenol emissions below the major source threshold of 10 tons per year.

[13] Air quality modeling was conducted at 15.9 pounds of ammonia per hour. At that emission rate, no violation of the acceptable ambient air concentration specified in Table A of ch. NR 445, Wis. Adm. Code was predicted.

**E´. Stack S50, Control Device C51 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [after initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 6. Formaldehyde | (1) Emissions may not exceed 0.2 pound per hour. [14] [s. 285.65(7), Wis. Stats., s. NR 445.08(2), Wis. Adm. Code, Permit # 12-MHR-176] | (1) As required under I.E´.3.b.(1) – (2).<br><br>(2) The permittee shall conduct emission testing on Stack S50 at the times specified below to demonstrate compliance with the emission limit specified in I.E´.6.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. NR 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | (1) Whenever formaldehyde compliance testing is required, USEPA Method 323, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>(2) As required under I.E´.1.c.(3)-(5). |
| 7. Nitrogen Oxides | (1) Emissions may not exceed 0.105 pound per pound of hexamethylene tetramine (hexa) applied. [s. 285.65(7), Wis. Stats., Permit # 12-MHR-176]<br><br>(2) The permittee shall limit hexa usage in processes that vent to Stacks S50 and S150, combined to 230,159 pounds per month, based on a 12-month rolling average. [s. 285.65(7), Wis. Stats., Permit # 12-MHR-176]<br><br>**NOTE:** The permittee proposed to limit nitrogen oxides emissions below the prevention of significant deterioration major source threshold of 250 tons per year. | (1) As required under I.E´.1.b.(1), (2), (3), & (5).<br><br>(2) The permittee may only fire natural gas as a supplemental fuel within Control Device C51 [s. NR 406.10, Wis. Adm. Code, s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>(3) The permittee shall conduct emission testing on Stack S50 at the times specified below while applying hexa at an application rate (in pounds per hour) that results in the highest nitrogen application rate to demonstrate compliance with the emission limit specified in I.E´.7.a.(1):<br><br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer.<br>(b) Annually thereafter, within 60-days of the anniversary date of the initial compliance test., except as specified in (c) below.<br>(c) Whenever the results from two consecutive emission test are no greater than 50% of the | (1) Whenever compliance emission testing is required, US EPA Method 7 or 7E, in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04, Wis. Adm. Code, shall be used to demonstrate compliance. When approved in writing by the Department an equivalent test method may be substituted for the required test method. [s. NR 439.06(6), Wis. Adm. Code, Permit # 12-MHR-176]<br><br>(2) As required under I.E´.1.c.(3) – (5).<br><br>(3) The permittee shall keep and maintain copies of emission testing results, which include the following:<br>(a) nitrogen oxides emission rate, in pounds per hour,<br>(b) hexa application rate, in pounds per hour,<br>(c) nitrogen oxides emission rate, in pounds per pound of hexa. |

[14] The permittee proposed to limit formaldehyde emissions below the 4,712 pounds per year threshold specified in Table A of ch. NR 445, Wis. Adm. Code.

**E´. Stack S50, Control Device C51 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [after initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | limit in I.E´.7.a.(1), the department may approve a written request to conduct subsequent emission tests every 24 months thereafter, within 60 days of the anniversary date of the initial compliance test; and<br>(d) On or before the 60th day after applying hexa at an application rate higher than that used during any previous nitrogen oxides emission test.<br><br>[s. NR 439.075(1)(b), Wis. Adm. Code, Permit # 12-MHR-176]<br><br>**(4)** For Control Device C51, the operating temperature shall be maintained at or below 1,500 °F. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(5)** Within 30 days after each calendar month, the permittee shall record the hexa usage in all processes that vent to Stack S50, in pounds per month. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(6)** Within 30 days after each calendar month, the permittee shall record the hexa usage in all processes that vent to Stack S150, in pounds per month. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(7)** Within 30 days after each calendar month, the permittee shall calculate and record the hexa usage in all processes that vent to Stack S50 and S150, combined, in pounds per month. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(8)** Within 30 days after each calendar month, the permittee shall calculate and record the hexa usage in all processes that vent to Stack S50 and S150, | [s. 439.04(1)(d), Wis. Adm. Code, Permit # 08-MHR-171]<br><br>**(4)** .The permittee shall keep and maintain the following records<br>(a) the amount of hexa used in processes that vent to Stack S150, in pounds per month,<br>(b) the amount of hexa used in processes that vent to Stack S50 and S150, combined, in pounds per month,<br>(c) the amount of hexa used in processes that vent to Stack S50 and S150, combined, in pounds per month, based on a 12 consecutive month period.<br>[NR 439.04(1)(d), Wis. Adm. Code, Permit # 12-MHR-176] |

**E'. Stack S50, Control Device C51 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005] [after initial operation of the recuperative thermal oxidizer (Control Device C51)]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | combined, in pounds per month, based on a 12-month rolling average using the following method. After the first month, average hexa usage shall equal hexa usage for that month. After the second month, average hexa usage shall equal total hexa usage for those two months divided by two. After the third month, average hexa usage shall equal total hexa usage for those three months divided by three. That same method shall be used for months three through eleven. After the 12th month, average hexa usage shall equal total hexa usage for the most recent 12 consecutive months divided by 12. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176] | |
| **8.** Cease Operations | **(1)** The permittee shall dismantle and/or make Process P53 permanently inoperable prior to the date when Control Device C51 becomes operational. [s. 406.10, Wis. Adm. Code, Permit # 12-MHR-176] | | **(1)** The permittee shall keep and maintain the following records:<br>**(a)** The date when Control Device C51 becomes operational, and<br>**(b)** The date when Process P53 was dismantled and/or made permanently inoperable.<br>[s. 439.04(1)(d), Wis. Adm. Code, Permit # 12-MHR-176] |

F. **Fugitive Sources F11 and F61, Processes P11 and P61 – Railcar Unloading (P11/F11) and Railcar Loading (P61/F61). [Constructed 2005]**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Fugitive Dust | (1) The permittee may not cause, allow or permit any materials to be handled, transported or stored without taking precautions to prevent particulate matter from becoming airborne. Nor may the permittee allow a structure, a parking lot, or a road to be used, constructed, altered, repaired, sand blasted, or demolished without taking such precautions. [s. NR 415.04(Intro.), Wis. Adm. Code, and Permit # 05-JAJ-015] | (1) No person may cause, allow or permit any materials to be handled, transported or stored without taking precautions to prevent particulate matter from becoming airborne. Nor may a person allow a structure, a parking lot, or a road to be used, constructed, altered, repaired, sand blasted or demolished without taking such precautions. [s. NR 415.04, Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>(2) Such precautions shall include, but not be limited to:<br>(a) Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, or construction operations.<br>(b) Application of asphalt, water, suitable chemicals or plastic covering on dirt roads, material stockpiles and other surfaces which can create airborne dust, provided such application does not create a hydrocarbon, odor or water pollution problem.<br>(c) Installation and use of hoods, fans, and air cleaning devices to enclose and vent the areas where dusty materials are handled.<br>(d) Covering or securing of materials likely to become airborne while being moved on public roads, railroads or navigable waters.<br>(e) Conduct of agricultural practices such as tilling of land or application of fertilizers in such manner as not to create air pollution.<br>(f) The paving or maintenance of roadway areas so as not to create air pollution.<br>[s. NR 415.04(1), Wis. Adm. Code, and Permit # 05-JAJ-015] | (1) Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17. [s. NR 439.06(1), Wis. Adm. Code]<br><br>(2) If using water or chemicals for dust control, the permittee shall record:<br>(a) the date and time of the water or chemical application; and<br>(b) the area(s) at the facility where water or chemicals are applied.<br>[s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 05-JAJ-015] |

G. **Stack S114, Control Device C114, Process P114 – Raw Silo #11**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Particulate Matter Emissions | (1) Emissions may not exceed 0.10 pounds per hour. [15] [ss. NR 415.05(1)(o) and 415.05(2), Wis. Adm. Code, and 07-JAJ-042]<br><br>(2) Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 65.5 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 6 inches.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the horizontal flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit #s 07-JAJ-042 and 12-MHR-176] | (1) The panel filter control device shall be in line and shall be operated at all times when the process is in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042] | (1) Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17. [s. NR 439.06(1), Wis. Adm. Code]<br><br>(2) The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042] |
| 2. Visible Emissions | (1) Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and 07-JAJ-042] | (1) The requirements in I.G.1.b. and I.G.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and 07-JAJ-042] | (1) Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] |

[15] The 0.10 pounds per hour emission limit is based on 0.40 pounds of particulate per 1,000 pounds of gas, for: 56 acfm, ambient exhaust temperature, and 0.02% moisture. This emission limit is more restrictive than the allowable emission limit of 38.6 pounds per hour calculated from the process weight rate equation in s. NR 415.05(2), Wis. Adm. Code, for a process weight rate of 150 tons per hour.

H. **Stack S115, Control Device C115, Process P115 – Raw Silo #12**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Particulate Matter Emissions | (1) Emissions may not exceed 0.10 pounds per hour. [16] [ss. NR 415.05(1)(o) and 415.05(2), Wis. Adm. Code, and 07-JAJ-042]<br><br>(2) Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 65.5 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 6 inches.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the horizontal flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit #s 07-JAJ-042 and 12-MHR-176] | (1) The panel filter control device shall be in line and shall be operated at all times when the process is in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042] | (1) Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17. [s. NR 439.06(1), Wis. Adm. Code]<br><br>(2) The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042] |
| 2. Visible Emissions | (1) Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and 07-JAJ-042] | (1) The requirements in I.H.1.b. and I.H.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and 07-JAJ-042] | (1) Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] |

[16] The 0.10 pounds per hour emission limit is based on 0.40 pounds of particulate per 1,000 pounds of gas, for: 56 acfm, ambient exhaust temperature, and 0.02% moisture. This emission limit is more restrictive than the allowable emission limit of 38.6 pounds per hour calculated from the process weight rate equation in s. NR 415.05(2), Wis. Adm. Code, for a process weight rate of 150 tons per hour.

I. **Stack S120, Control Device C120, Processes: P113 – Elevator #11, P116 - Conveyor #12, P117 - Elevator #12, P121 - Day Tank, P122 - Weigh Hopper #11, P123 - Raw Material Heater, P124 - Cyclone, P127 – Elevator #13, P128 - Resin Tank, P129 - Weigh Hopper #12, P141 - Shaker Screen, P142 - Elevator #14, P143 - Scalping Screen, P144 - Product Cooler, P145 - Elevator #15, P146 - Finished Silo #11, P147 - Finished Silo #12, P148 - Finished Silo #13, P161 - Conveyor #13, P162 - Elevator #16, P163 Weigh Belt**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| **1.** Particulate Matter Emissions | **(1)** Emissions may not exceed 1.0 pounds per hour. [17] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(2)** Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 18.5 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 2 feet 4 inches.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit #s 07-JAJ-042 and 12-MHR-176]<br><br>**(3)** Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C120/S120 are a pollutant-specific emissions unit for particulate matter and is subject to the CAM requirements of 40 CFR, part 64. The permittee's | **(1)** The baghouse control device shall be in line and shall be operated at all times when the processes are in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042]<br><br>**(2)** Instrumentation to monitor the pressure drop across the baghouse control device shall be installed operated, calibrated, and maintained properly. [s. NR 439.055(1)(a), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(3)** The pressure drop across the baghouse control device shall be maintained between 1 and 8 inches water column, or as required in the CAM Plan under Part III. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042] | **(1)** Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensible backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code]<br><br>**(2)** The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(3)** The permittee shall record the pressure drop across the baghouse once for every 8 hours of operation or once per day, whichever yields the greater number of measurements. [s. NR 439.055(2)(b)1., Wis. Adm. Code, and 07-JAJ-042]<br><br>**(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the baghouse system, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(5)** The baghouse control device pressure drop |

[17] The 1.0 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). This emission limit is more restrictive than the allowable emission limit of 10.3 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

I. **Stack S120, Control Device C120, Processes: P113 – Elevator #11, P116 - Conveyor #12, P117 - Elevator #12, P121 - Day Tank, P122 - Weigh Hopper #11, P123 - Raw Material Heater, P124 - Cyclone, P127 – Elevator #13, P128 - Resin Tank, P129 - Weigh Hopper #12, P141 - Shaker Screen, P142 - Elevator #14, P143 - Scalping Screen, P144 - Product Cooler, P145 - Elevator #15, P146 - Finished Silo #11, P147 - Finished Silo #12, P148 - Finished Silo #13, P161 - Conveyor #13, P162 - Elevator #16, P163 Weigh Belt**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | Compliance Assurance Monitoring Plan for Baghouse C120 for PM control is included as Part III of this permit. [s. 285.65(13), Wis. Stats. 40 CFR 64.2 and 40 CFR 64.3(d)] | | monitoring device shall be maintained in accordance with the manufacturer's recommendations and shall be calibrated at least once per year. [s. NR 439.11(1)(b) and s. NR 439.055(4), Wis. Adm. Code, and 07-JAJ-042] |
| **2.** Visible Emissions | **(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and 07-JAJ-015] | **(1)** The requirements in I.I.1.b. and I.I.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and 07-JAJ-042] | **(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] |
| **3.** Hazardous Air Pollutants Regulated by the Clean Air Act: NESHAP for Industrial, Commercial and Institutional | **(3)** Except as specified in I.I.3.a.(2) below, the permittee shall comply with the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Sources, as applicable.[18] [s. 285.65(13), Wis. Adm. Code, 40 CFR, Part 63, Subpart DDDDD]<br><br>**(4)** The permittee shall not be affected by | | **(2)** The permittee shall keep and maintain the dates when each Control Device C51 and C151 become operational. [s. NR 439.04(1)(d), Permit # 12-MHR-176] |

[18] The permittee will be required to comply with all applicable requirements by the established compliance dates. On March 21, 2011, an amended version of EPA's National Emission Standard for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Sources, was published as a final rule in the Federal Register (40 CFR Part 63, subpart DDDDD). That amended version of the rule was published as a final rule in the Federal Register on February 1, 2013. Under the amended rule, natural gas, raw material heater P124 is a "process heaters" per the definition in 40 CFR s. 63.7575. Because this process heater was constructed prior to June 4, 2010, it is considered existing affected sources, pursuant to 40 CFR s. 63.7490(d). The heater burns natural gas and is included in the boiler and process heater subcategory "units designed to burn natural gas, refinery gas or other gas 1 fuels" in 40 CFR s. 63.74999(l). Process heater P124 has a heat input capacity less than 10 million Btu per hour (rated at 6.0 million Btu per hour), As an existing affected source it is required to comply with the requirements of 40 CFR Part 63, subpart DDDDD of the amended rule no later than March 21,2016, pursuant to 40 CFR s. 63.7495(b).

When Control Devices C51 and C151 become operational, the permittee shall no longer be affected by 40 CFR Part 63, subpart DDDDD, and 40 CFR Part 63, subpart JJJJJJ does not affect process heaters.

I. **Stack S120, Control Device C120, Processes: P113 – Elevator #11, P116 - Conveyor #12, P117 - Elevator #12, P121 - Day Tank, P122 - Weigh Hopper #11, P123 - Raw Material Heater, P124 - Cyclone, P127 – Elevator #13, P128 - Resin Tank, P129 - Weigh Hopper #12, P141 - Shaker Screen, P142 - Elevator #14, P143 - Scalping Screen, P144 - Product Cooler, P145 - Elevator #15, P146 - Finished Silo #11, P147 - Finished Silo #12, P148 - Finished Silo #13, P161 - Conveyor #13, P162 - Elevator #16, P163 Weigh Belt**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| Boilers and Process Heaters at Major Sources (40 CFR, Part 63, Subpart DDDDD)<br><br>Hazardous Air Pollutants Regulated by the Clean Air Act: NESHAP for Industrial, Commercial and Institutional Boilers at Area Sources (40 CFR, Part 63, Subpart JJJJJJ) | the requirements specified in I.I.3.a.(1) above beginning on the date when Control Devices C51 and C151 become operational. [40 CFR, Part 63, Subpart JJJJJJ, Permit # 12-MHR-176] | | |

**J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (before replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Particulate Matter Emissions | **(1)** Emissions may not exceed 1.5 pounds per hour. [19] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(2)** Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 92.2 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 2 feet 6 inches.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases.<br>[s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit #s 07-JAJ-042 and 12-MHR-176] | **(1)** The wet scrubber control device, including demister, shall be in line and shall be operated at all times when any Process P151, P152, and/or P153 is in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042]<br><br>**(2)** Instrumentation to monitor the pressure drop across the wet scrubber and demister, in inches of water column, shall be operated, calibrated, and maintained properly. [s. NR 439.055(1)(e), Wis. Adm. Code, and 07-JAJ-042]<br><br>(3) To verify wet scrubber liquor flow, the permittee shall do one of the following:<br>(a) Operate, calibrate, and maintain instrumentation to monitor the wet scrubber liquor flow rate, in gallons per minute [s. NR 439.055(1)(e), Wis. Adm. Code and 07-JAJ-042]; or<br>(b) Conduct visual inspections of the scrubber liquor pump flow to confirm return flow of scrubber liquor to sludge tank and monitor and record the motor power of the scrubber liquor recirculation pump. [s. 285.65(4), Wis. Stats. and s. NR 407.09(4), Wis. Adm. Code]<br><br>**(4)** Instrumentation and laboratory techniques[20] to monitor the pH of the wet scrubber absorbing | **(1)** Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensible backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code]<br><br>**(2)** The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(3)** The permittee shall measure and record the following operational variables once for every 8 hours of operation or once per day, whichever yields the greater number of measurements:<br>(a) Pressure drop across the wet scrubber and demister, in inches of water column,<br>(b) pH of the absorption scrubbing fluid,<br>(c) Either:<br>(i) Flow of liquor, in gallons per minute; OR<br>(ii) Motor power of the scrubber liquor recirculation pump, and the results of the visual inspections required by I.J.1.b.(3)(b), including the date, time, and name or initials of the individual performing the inspection. |

[19] The 1.5 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). This emission limit is more restrictive than the allowable emission limit of 5.18 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

[20] Atlas takes samples from the sludge tank manually and the pH of the samples are measured in the laboratory.

**J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (before replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | fluid shall be utilized properly. [s. NR 439.055(1)(f), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(5)** The pressure drop across the wet scrubber and demister shall be maintained between 8 and 17 inches water column, or an alternative range approved in writing by the Department. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042] | [s. NR 439.055(2)(b), Wis. Adm. Code, and s. 285.65(4), Wis. Stats., and 07-JAJ-042]<br><br>**(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the wet scrubber system, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(5)** The wet scrubber pressure drop, liquor flow, and pH monitoring devices shall be maintained in accordance with the manufacturer's recommendations and shall be calibrated at least once per year. [s. NR 439.11(1)(b) and s. NR 439.055(4), Wis. Adm. Code, and 07-JAJ-042] |
| **2.** Visible Emissions | **(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and 07-JAJ-042] | **(1)** The requirements in I.J.1.b. and I.J.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and 07-JAJ-042] | **(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] |
| **3.** Volatile Organic Compounds | **(1)** Latest Available Control Techniques and operating practices demonstrating best current technology (LACT). The permittee has demonstrated that 85% control of VOC emissions leaving the wet scrubber is technologically infeasible for the process line, and so shall use LACT. LACT is defined as the following process operation practices and limitations:<br>(a) The facility shall operate the wet scrubber at all times the processes P151, P152, and P153 are operational, | **(1)** The facility shall operate the wet scrubber at all times the processes are operating. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042]<br><br>**(2)** As required under I.J.1.b.(2)-(4).<br><br>**(3)** The pressure drop across the wet scrubber and demister, the liquor flow rate, and the pH of the scrubbing fluid shall be maintained per manufacturer specifications, the most recent compliance test, the malfunction prevention and abatement plan required under I.ZZZ.1., or the CAM Plan required under Part III to meet the | **(1)** Whenever VOC compliance testing is required, USEPA Method 18, 25 or 25A, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(3), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(2)** As required under I.J.1.c.(3)-(5).<br><br>**(3)** The permittee shall inspect the circulation pump and packing of the wet scrubber monthly. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042] |

J. **Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (before replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | with monitoring of parameters: pressure differential, liquor flow rate, and pH of the scrubbing fluid.<br>(b) The wet scrubber shall achieve one of the following:<br>(i) An overall control efficiency of 64% for VOC emissions, or<br>(ii) VOC emission rate no greater than 11.0 pounds per hour.<br>[s. NR 424.03(2)(c), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(2)** Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C150/S150 are a pollutant-specific emissions unit for volatile organic compounds and is subject to the CAM requirements of 40 CFR, part 64. The permittee's Compliance Assurance Monitoring Plan for Scrubber C150 for volatile organic compound control is included as Part III of this permit. [s. 285.65(13), Wis. Stats. 40 CFR 64.2 and 40 CFR 64.3(d)] | requirements under I.J.3.a.(1) and I.J.1.a.(1). [s. NR 419.03(1), Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and 07-JAJ-042] | **(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the wet scrubber, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042] |
| **4.** Phenol Emissions | **(1)** The processes may not emit more than 1,583 pounds of phenol per month, based on a 12-month rolling average (9.5 tons per year). [s. 285.65(7), Wis. Stats., and 07-JAJ-042-R1]<br><br>**(2)** The free phenol content of the resin may not exceed 1.5%, by weight. [s. 285.65(7), Wis. Stats., and 07-JAJ-042] | **(1)** Each calendar month, the permittee shall calculate the phenol emissions from this stack as follows. This calculation shall be performed within 15 calendar days of the end of each month. [s. NR 407.09(4)(a), Wis. Adm. Code and Permit # 05-JAJ-015-R1]<br><br>$E_{phenol} = \sum[(EF_i \times Z_i) \times (1-C_{eff})$<br><br>where,<br>$E_{phenol}$ is the monthly phenol emissions in pounds | **(1)** Whenever Phenol compliance testing is required, NIOSH Method 2546, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and 07-JAJ-042]<br><br>**(2)** The permittee shall maintain records of the following:<br>(a) The total amount of each resin used in |

**J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (before replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | **(3)** The wet scrubber shall achieve one of the following:<br>(a) An overall control efficiency of 64% for VOC emissions, as required under I.J.3.a.(1)(b)(i),<br>(b) An overall control efficiency of 54.5% for phenol emissions, or<br>(c) A maximum emission rate of 3.3 lbs/hr.[21]<br>[s. 285.65(7), Wis. Stats., and 07-JAJ-042, and 627005280-P02] | per month;<br>$EF_i$ is an emission factor of the amount of phenol emitted per pound of each resin "i" used (lbs-phenol/lb resin)[22];<br>$Z_i$ is the amount of resin "i" used in pounds per month; and<br>$C_{eff}$ is the efficiency of any control device controlling phenol emissions.[23]<br><br>**(2)** To demonstrate compliance with condition I.J.4.a.(1), the permittee shall calculate the average phenol emissions from the facility over each 12 consecutive month period by summing the monthly phenol emissions as calculated in I.J.4.b.(1) for each consecutive 12 month period and dividing by 12. This calculation shall be performed within 15 calendar days of the end of each month for the previous 12 consecutive month period. [s. NR 407.09(4)(a)1., Wis. Adm. Code and Permit # 05-JAJ-015-R1]<br><br>**(2)** As required under I.J.3.b.(3). | pounds per month ($Z_i$);<br>(b) The monthly phenol emission rate in pounds per month ($E_{phenol}$) as calculated in I.J.4.b.(1);<br>(c) The 12-month rolling average phenol emission rate for each consecutive 12 month period, as calculated in I.J.4.b.(2); and<br>(d) Material safety data sheets or other technical documents which show the free phenol content of each resin used.<br>[s. NR 407.09(4)(a)1., Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and Permit # 05-JAJ-015]<br><br>**(3)** As required under I.J.1.c.(3). |

[21] This emission limitation established under 627005280-P02, along with current limits under (1) – (3) will keep potential emissions of phenol to <10 TPY (9.5 TPY).
[22] At the time of permit issuance, two types of resins are used, novalac and resol. The emissions factor for novalac resin ($EF_{novalac}$) is 0.0041 lbs-phenol/lb novalac resin. The emission factor for resol resin ($E_{resol}$) is 0.0012 lbs-phenol/lb resol resin. The permittee may use alternate emission factors if approved by the department in writing.
[23] At the time of permit issuance $C_{eff}$ is 54.5 percent as established by stack testing conducted in June 2006. The permittee may use a $C_{eff}$ as determined during the most recent phenol compliance emission test, and as approved by the department in writing.

**J'. Stack S150, Control Device C151, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (after replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| 1. Particulate Matter Emissions (PM, PM-10 and PM-2.5) | (1) Emissions of each pollutant PM, PM-10, and PM-2.5 may not exceed 1.50 pounds per hour. [24] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176]<br><br>(2) Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.<br>(a) Stack height shall be at least 92 feet above ground level.<br>(b) The stack inside diameter at the outlet may not be greater than 2.47 feet.<br>(c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases. | (1) The recuperative thermal oxidizer (Control Device C151) shall be in line and shall be operated at all times when any Process P151 and/or P152, is in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>(2) The permittee shall operate, calibrate and maintain instrumentation to monitor the temperature within the combustion chamber, in degrees Fahrenheit or Celsius (centigrade). The permittee shall record the temperature automatically every 15 minutes whenever any Process P151 and/or P152 is operating. [s. NR 439.055(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>(3) Each temperature monitoring device shall be accurate to within ± 0.5% of the temperature being measured in degrees Fahrenheit or within ± 5° F of the temperature being measured, or the equivalent in degrees Celsius (centigrade), whichever is greater. [s. NR 439.055(3)(a), Wis., Adm. Code, Permit # 12-MHR-176]<br><br>(4) The temperature within the combustion chamber shall be no less than 1,400 degrees Fahrenheit, or at or above the minimum temperature from the most recent stack test that shows compliance with the emission limits | (1) Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensible backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176]<br><br>(2) Reference Test Method for PM-10 and PM-2.5 Emissions: Whenever PM-10 and/or PM-2.5 emission testing is required, the permittee shall use<br>(a) The methods specified in (1) above, or<br>(b) U.S. EPA Method 201A and US EPA Method 202 for condensable particulates.<br>[s. NR 439.06(1)-(1m), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>(3) The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit #s 05-JAJ-015 and 12-MHR-176]<br><br>(4) The permittee shall monitor and record the temperature of the combustion chamber every 15 minutes. [s. NR 439.055(2)(a), |

[24] The 1.50 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). This emission limit is more restrictive than the allowable emission limit of 5.18 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

**J´. Stack S150, Control Device C151, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (after replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | [s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and Permit # 12-MHR-176] | specified in I.J´.1.a.(1), I.J´.3.a.(1), I.J´.4.a.(1), I.J´.5.a.(1), and I.J´.6.a.(1) or an alternative level approved in writing by the Department. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>**(5)** The permittee shall perform annual inspections of the recuperative thermal oxidizer and perform maintenance and repairs as necessary. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(6)** The permittee shall conduct PM-10 emission testing on Stack S50 or S150 at the times specified below to demonstrate compliance with the emission limit specified in I.J´.1.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | Wis. Adm. Code, and s. 285.65(4), Wis. Stats., and Permit #12-MHR-176]<br><br>**(5)** The permittee shall keep and maintain the following<br>(a) the date when Control Device C51 became operational,<br>(b) records of all inspections, checks and any maintenance or repairs performed on the oxidizer system, containing the date of the action, initials of inspector, and the results,<br>(c) copies of emission testing results,<br>(d) records of the calibration, inspection, maintenance, and repair activities conducted on the temperature monitoring devices, and<br>(e) oxidizer combustion chamber temperature records.<br>[s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176] |
| **2.** Visible Emissions | **(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and Permit # 05-JAJ-015] | **(1)** The requirements in I.J´.1.b. and I.J´.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>**(2)** The permittee shall conduct emission testing on Stack S50 or S150 at the times specified below to demonstrate compliance with the emission limit specified in I.J´.2.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department. | **(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code, and Permit # 05-JAJ-015]<br><br>**(2)** The permittee shall keep and maintain copies of emission testing results. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176] |

**J´. Stack S150, Control Device C151, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (after replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | [s. 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | |
| 3. Volatile Organic Compounds | (1) Emissions may not exceed 3.35 pound per hour. [s. NR 424.03(2)(b), Wis. Adm. Code, Permit # 12-MHR-176]<br><br>NOTE: This limit reflects 85% control of VOC emissions, as required by s. NR 424.03(2)(b), Wis. Adm. Code]<br><br>(2) The permittee shall vent emissions generated from each Process P151 and P152 to the recuperative thermal oxidizer (Control Device C151) and operate Control Device C151 so that it controls at least 85% of VOC emissions (on an overall control efficiency basis). [s. NR 424.03(2)(b), Wis. Adm. Code, Permit # 12-MHR-176]<br><br>(3) Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C151/S150 is subject to the CAM requirements of 40 CFR, part 64. The permittee's Compliance Assurance Monitoring Plan for Control Device C151 is included as | (1) The recuperative thermal oxidizer shall be in line and shall be operated at all times when any Process P151 and/or P152 is in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>(2) As required under I.J´.1.b.(2)-(5).<br><br>(3) The permittee shall conduct emission testing on Stack S150 at the times specified below to demonstrate compliance with the emission limits specified in I.J´.3.a.(1)-(2):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | (1) Whenever VOC compliance testing is required, USEPA Method 18, 25 or 25A, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(3), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>(2) Whenever compliance testing is required to determine the overall VOC control efficiency of the regenerative thermal oxidizer, the permittee shall<br><br>(a) use USEPA Method 18 or 25A to determine the destruction efficiency of that control device, and<br>(b) use USEPA Method 204, 204A, 204B, 204C, 204D, 204E., or 204F in 40 CFR part 51 Appendix M, or the data quality objective method or lower confidence method in 40 CFR part 63 subpart KK, Appendix A to determine the VOC capture efficiency of that control device<br>[s. NR 439.06(3)(a)-(am), Wis. Adm. Code]<br><br>(3) As required under I.J´.1.c.(3)-(5).<br><br>(4) The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the oxidizer, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176] |

**J´. Stack S150, Control Device C151, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (after replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | Part III of this permit. [s. 285.65(13), Wis. Stats. 40 CFR 64.2 and 40 CFR 64.3(d)] | | **(5)** The permittee shall keep and maintain copies of emission testing results. [s. NR 439.04(1)(d), Wis. Adm. Code, and Permit # 12-MHR-176] |
| **4.** Phenol Emissions | **(1)** Emissions may not exceed 0.9 pound per hour. [25] [s. 285.65(7), Wis. Stats., Permit # 12-MHR-176] | **(1)** As required under I.J´.3.b.(1) – (2).<br><br>**(2)** The permittee shall conduct emission testing on Stack S150 at the times specified below to demonstrate compliance with the emission limit specified in I.J'.4.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. NR 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | **(1)** Whenever Phenol compliance testing is required, NIOSH Method 2546, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>**(2)** As required under I.J´.1.c.(3) – (5). |
| **5.** Ammonia Emissions | **(1)** Emissions may not exceed 15.9 pound per hour. [26] [s. NR 445.08(2)(b), Wis. Adm. Code, Permit # 12-MHR-176] | **(1)** As required under I.J´.3.b.(1) – (2).<br><br>**(2)** The permittee shall conduct emission testing on Stack S150 at the times specified below to demonstrate compliance with the emission limit specified in I.J´.5.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. NR 439.075(1), Wis. Adm. Code, Permit # 12- | **(1)** Reference Test Method for Ammonia Emissions: Whenever ammonia emission testing is required, the permittee shall use U.S. EPA Method 206 (a.k.a. CTM-207) or other appropriate test method approved by the department in writing. [s. NR 439.06(8), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>**(2)** As required under I.J´.1.c.(3) – (5). |

[25] The permittee proposed to limit phenol emissions below the major source threshold of 10 tons per year.

[26] Air quality modeling was conducted at 15.9 pounds of ammonia per hour. At that emission rate, no violation of the acceptable ambient air concentration specified in Table A of ch. NR 445, Wis. Adm. Code was predicted.

**J´. Stack S150, Control Device C151, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (after replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | MHR-176] | |
| 6. Formaldehyde | (1) Emissions may not exceed 0.2 pound per hour.[27] [s. 285.65(7), Wis. Stats., s. NR 445.08(2), Wis. Adm. Code, Permit #s 05-JAJ-015, 627005280-P02 and 12-MHR-176] | (1) As required under I.J´.3.b.(1) – (2).<br><br>(2) The permittee shall conduct emission testing on Stack S150 at the times specified below to demonstrate compliance with the emission limit specified in I.J´.6.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer, and<br>(b) At other times as may be required by the department.<br>[s. NR 439.075(1), Wis. Adm. Code, Permit # 12-MHR-176] | (1) Whenever formaldehyde compliance testing is required, USEPA Method 323, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and Permit # 12-MHR-176]<br><br>(2) As required under I.J´.1.c.(3) – (5). |
| 7. Nitrogen Oxides | (1) Emissions may not exceed 0.105 pound per pound of hexamethylene tetramine (hexa) applied. [s. 285.65(7), Wis. Stats., Permit # 12-MHR-176]<br><br>(2) The permittee shall limit hexa usage in processes that vent to Stacks S50 and S150, combined to 230,159 pounds per month, based on a 12-month rolling average. [s. 285.65(7), Wis. Stats., Permit # 12-MHR-176]<br><br>**NOTE:** The permittee proposed to limit nitrogen oxides emissions below the prevention of significant | (1) As required under I.J´.1.b.(1), (2), (3), & (5).<br><br>(2) The permittee may only fire natural gas as a supplemental fuel within Control Device C151 [s. NR 406.10, Wis. Adm. Code, s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>(3) The permittee shall conduct emission testing on Stack S150 at the times specified below while applying hexa at an application rate (in pounds per hour) that results in the highest nitrogen application rate to demonstrate compliance with the emission limit specified in I.J´.7.a.(1):<br>(a) On or before the 90th day after initially operating the recuperative thermal oxidizer.<br>(b) Annually thereafter, within 60 days of the anniversary date of the initial compliance test, except as specified in (c) below.<br>(c) Whenever the results from two consecutive emission test are no greater than 50% of the | (1) Whenever compliance emission testing is required, US EPA Method 7 or 7E, in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04, Wis. Adm. Code, shall be used to demonstrate compliance. When approved in writing by the Department an equivalent test method may be substituted for the required test method. [s. NR 439.06(6), Wis. Adm. Code, Permit # 12-MHR-176]<br><br>(2) As required under I.J´.1.c.(3) – (5).<br><br>(3) The permittee shall keep and maintain copies of emission testing results, which include the following:<br>(a) nitrogen oxides emission rate, in pounds per hour,<br>(b) hexa application rate, in pounds per hour,<br>(c) nitrogen oxides emission rate, in pounds |

[27] The permittee proposed to limit formaldehyde emissions below the 4.712 pounds per year threshold specified in Table A of ch. NR 445, Wis. Adm. Code.

**J´. Stack S150, Control Device C151, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (after replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | deterioration major source threshold of 250 tons per year. | limit in I.J´.7.a.(1), the department may approve a written request to conduct subsequent emission tests every 24 months thereafter, within 60 days of the anniversary date of the initial compliance test; and<br>(d) On or before the 60th day after applying hexa at an application rate higher than that used during any previous nitrogen oxides emission test.<br><br>[s. NR 439.075(1)(b), Wis. Adm. Code, Permit # 12-MHR-176]<br><br>**(4)** For Control Device C151, the operating temperature shall be maintained at or below 1,500 °F. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(5)** Within 30 days after each calendar month, the permittee shall record the hexa usage in all processes that vent to Stack S50, in pounds per month. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(6)** Within 30 days after each calendar month, the permittee shall record the hexa usage in all processes that vent to Stack S150, in pounds per month. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(7)** Within 30 days after each calendar month, the permittee shall calculate and record the hexa usage in all processes that vent to Stack S50 and S150, combined, in pounds per month. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176]<br><br>**(8)** Within 30 days after each calendar month, the permittee shall calculate and record the hexa usage in all processes that vent to Stack S50 and S150, | per pound of hexa.<br><br>[s. 439.04(1)(d), Wis. Adm. Code, Permit # 08-MHR-171]<br><br>**(4)** .The permittee shall keep and maintain the following records<br>(a) the amount of hexa used in processes that vent to Stack S50, in pounds per month,<br>(b) the amount of hexa used in processes that vent to Stack S150, in pounds per month,<br>(c) the amount of hexa used in processes that vent to Stack S50 and S150, combined, in pounds per month,<br>(d) the amount of hexa used in processes that vent to Stack S50 and S150, combined, in pounds per month, based on a 12-month rolling average.<br>[NR 439.04(1)(d), Wis. Adm. Code, Permit # 12-MHR-176] |

**J'. Stack S150, Control Device C151, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank (after replacing wet scrubbers with recuperative thermal oxidizers)**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | combined, in pounds per month, based on a 12-month rolling average using the following method. After the first month, average hexa usage shall equal hexa usage for that month. After the second month, average hexa usage shall equal total hexa usage for those two months divided by two. After the third month, average hexa usage shall equal total hexa usage for those three months divided by three. That same method shall be used for months three through eleven. After the 12th month, average hexa usage shall equal total hexa usage for the most recent 12 consecutive months divided by 12. [s. 285.65(3), Wis. Stats., Permit # 12-MHR-176] | |
| **8.** Cease Operations | **(1)** The permittee shall dismantle and/or make Process P153 permanently inoperable prior to the date when Control Device C151 becomes operational. [s. 406.10, Wis. Adm. Code, Permit # 12-MHR-176] | | **(1)** The permittee shall keep and maintain the following records:<br>**(a)** The date when Control Device C151 becomes operational, and<br>**(b)** The date when Process P153 was dismantled and/or made permanently inoperable.<br>[s. 439.04(1)(d), Wis. Adm. Code, Permit # 12-MHR-176] |

## K. Fugitive Sources F111 and F171, Processes P111 and P171 – Railcar Unloading - Plant #2 (P111/F111) and Railcar Loading - Plant #2 (P171/F171)

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| **1.** Fugitive Dust | **(1)** The permittee may not cause, allow or permit any materials to be handled, transported or stored without taking precautions to prevent particulate matter from becoming airborne. Nor may the permittee allow a structure, a parking lot, or a road to be used, constructed, altered, repaired, sand blasted, or demolished without taking such precautions. [s. NR 415.04(Intro.), Wis. Adm. Code, and 07-JAJ-042] | **(1)** No person may cause, allow or permit any materials to be handled, transported or stored without taking precautions to prevent particulate matter from becoming airborne. Nor may a person allow a structure, a parking lot, or a road to be used, constructed, altered, repaired, sand blasted or demolished without taking such precautions. [s. NR 415.04, Wis. Adm. Code, and 07-JAJ-042]<br><br>**(2)** Such precautions shall include, but not be limited to:<br>(a) Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, or construction operations.<br>(b) Application of asphalt, water, suitable chemicals or plastic covering on dirt roads, material stockpiles and other surfaces which can create airborne dust, provided such application does not create a hydrocarbon, odor or water pollution problem.<br>(c) Installation and use of hoods, fans, and air cleaning devices to enclose and vent the areas where dusty materials are handled.<br>(d) Covering or securing of materials likely to become airborne while being moved on public roads, railroads or navigable waters.<br>(e) Conduct of agricultural practices such as tilling of land or application of fertilizers in such manner as not to create air pollution.<br>(f) The paving or maintenance of roadway areas so as not to create air pollution.<br>[s. NR 415.04(1), Wis. Adm. Code, and 07-JAJ-042] | **(1)** Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17. [s. NR 439.06(1), Wis. Adm. Code]<br><br>**(2)** If using water or chemicals for dust control, the permittee shall record:<br>(a) the date and time of the water or chemical application; and<br>(b) the area(s) at the facility where water or chemicals are applied.<br>[s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042] |

**XXX. Facility Wide Emission Limitations**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| **1. Ammonia (before initial operation of any Control Device C51 or C151)** | **(1)** Facility wide ammonia emissions may not exceed 237.5 tons during any 12 consecutive month period.[28] [s. 285.65(7), Wis. Stats. and ss. NR 445.07(1)(a) and NR 445.08(2)(a), Wis. Adm. Code]<br><br>**(2)** * The permittee shall limit facility wide ammonia emissions in one of the following ways:<br>(a) Limit hexamethylenetetramine (hexa) use to not more than the following rates [ss. NR 445.07(1)(a) and NR 445.08(2)(b), Wis. Adm. Code]:<br>(i) Total hexa usage in Tower A and Tower B, combined may not exceed 7,310 pounds per day;<br>(ii) Hexa usage in Tower A may not exceed 5,375 pounds per day; AND<br>(iii) Hexa usage in Tower B may not exceed 7,029 pounds per day.<br>OR<br>(b) Limit ammonia emissions to less than 28.2 pounds per hour averaged daily. [ss. NR 445.07(1)(a) and NR 445.08(2)(a), Wis. Adm. Code]<br>OR<br>(c) Provided the permittee has prior written approval from the department, | **(1)** Each calendar month, the permittee shall calculate the facility wide ammonia emissions as follows. This calculation shall be performed within 15 calendar days of the end of each month. [s. NR 407.09(4)(a)1., Wis. Adm. Code]<br><br>$E_{NH3} = (0.27928 \times Z_{hexa}) \times (1 - C_{eff}) \times (1 \text{ ton}/2000 \text{ lbs})$<br><br>Where:<br>$E_{NH3}$ is the monthly ammonia emissions in tons per month;<br>0.27928 is an emission factor of the amount of ammonia emitted per pound of hexa used (lbs $NH_3$/lb hexa);<br>$Z_{hexa}$ is the amount of hexa used during the month in pounds per month; and<br>$C_{eff}$ is the efficiency of any control device controlling ammonia emissions.[30]<br><br>**(2)** To demonstrate compliance with condition I.XXX.1.a.(1), the permittee shall calculate the total ammonia emissions from the facility over each 12 consecutive month period by summing the monthly ammonia emissions as calculated in I.XXX.1.b.(1) for each consecutive 12 month period. This calculation shall be performed within fifteen calendar days of the end of each month for the previous 12 consecutive month period. [s. NR 407.09(4)(a)1., Wis. Adm. Code] | **(1)** Reference Test Method for Ammonia Emissions: Whenever ammonia emission testing is required, the permittee shall use U.S. EPA Method 206 (a.k.a. CTM-207) or other appropriate test method approved by the department in writing. [s. NR 439.06(8), Wis. Adm. Code]<br><br>**(2)** The permittee shall keep monthly records of:<br>(a) The amount of hexamethylenetetramine (hexa) used at the facility in pounds per month;<br>(b) The total monthly facility wide ammonia emissions ($E_{NH3}$) in tons per month as calculated in I.XXX.1.b.(1); and<br>(c) The total ammonia emissions from the facility in tons per year as calculated in I.XXX.1.b.(2).<br>[s. NR 439.04(1)(d), Wis. Adm. Code]<br><br>**(3)** The permittee shall maintain records as follows:<br>(a) If complying with condition I.XXX.1.a.(2)(a), the permittee shall keep daily records of hexa use for:<br>(i) Tower A;<br>(ii) Tower B; and |

[28] The permittee elected this limitation. This limitation also ensures that annual, facility wide ammonia emissions are less than the ch. NR 445, Table A value of 612,587 pounds per year.

[30] At the time of permit issuance $C_{eff}$ is zero. If the permittee installs equipment to control ammonia emissions, or modifies existing equipment to control ammonia emissions, the permittee may use a $C_{eff}$ as determined during the most recent ammonia compliance emission test, and as approved by the department in writing.

**XXX. Facility Wide Emission Limitations**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | limit the quantity, concentration or duration of ammonia, potential emissions from the facility so that the ambient air concentrations off the source property are less than the concentrations allowed under column (g) of Table A of s. NR 445.07, Wis. Adm. Code.[29] [s. NR 445.08(2)(b)]<br>OR<br>(d) Provided the permittee has prior written approval from the department, limit the concentration of ammonia in the stack to less than the ambient air concentrations allowed under column (g) of Table A of s. NR 445.07, Wis. Adm. Code. [s. NR 445.08(2)(e), Wis. Adm. Code] | **(3)** To demonstrate compliance with I.XXX.1.a.(2), the permittee shall keep the records required by I.XXX.1.c.(3). [s. NR 407.09(4)(a)1., Wis. Adm. Code]<br><br>**(4)** If complying with I.XXX.1.a.(2)(b), (c) or (d), the permittee shall use one of the following methods as approved by the department in writing:<br>(a) calculate daily average, hourly ammonia emissions as follows:<br><br>$E_{daily} = (0.27928 \times W_{hexa}) \times (1 - C_{eff}) \times (1 \text{ day}/24 \text{ hours})$<br><br>Where:<br>$E_{daily}$ is the daily average hourly ammonia emissions in pounds per hour;<br>0.27928 is an emission factor of the amount of ammonia emitted per pound of hexa used (lbs $NH_3$/lb hexa);<br>$W_{hexa}$ is the amount of hexa used during the day in pounds per day; and<br>$C_{eff}$ is the efficiency of any control device controlling ammonia emissions.[31]; OR<br>(b) Operate the ammonia control device(s) and associated monitoring equipment, so that the control device parameters monitored during the compliance emission testing under I.XXX.1.b.(5) are monitored and maintained within the normal operating ranges | (iii) Towers A and B combined.<br>(b) If complying with condition I.XXX.1.a.(2)(b), (c) or (d), the permittee shall keep records of either:<br>(i) the daily average, hourly ammonia emissions, as calculated in I.XXX.1.b.(4); OR<br>(ii) the ammonia control device parameter operating value(s) as monitored according to I.XXX.1.b.(4) and as approved by the department in writing.[32]<br>[s. NR 439.04(1)(d), Wis. Adm. Code]<br><br>**(4)** The permittee shall maintain records of:<br>(a) The report summarizing any compliance emission testing performed under I.XXX.1.b.(5);<br>(b) The ammonia control efficiency determined during any testing;<br>(c) A copy of any department's written approval to use a control efficiency when performing the calculations in I.XXX.1.b.(1), (2), and (4);<br>(d) A copy of the normal operating ranges established for the control device parameters monitored during the emission testing performed under |

[29] The acceptable ambient air concentrations for ammonia from Table A of s. NR 445.07, Wis. Adm. Code, at the time of permit issuance are 418 $\mu g/m^3$ on a 24-hour average and 100 $\mu g/m^3$ on an annual average.

[31] At the time of permit issuance $C_{eff}$ is zero. If the permittee installs equipment to control ammonia emissions, or modifies existing equipment to control ammonia emissions, the permittee may use a $C_{eff}$ as determined during the most recent ammonia compliance emission test, and as approved by the department in writing.

[32] The department approval to use ammonia control device parameter monitoring to demonstrate compliance with I.XXX.1.a.(2), will specify: (1) the parameters to be monitored; (2) the frequency that each parameter will be monitored and recorded; and (3) the normal operating range(s) of the parameter(s) to be monitored as determined during the compliance emission test required by I.XXX.1.b.(5).

**XXX. Facility Wide Emission Limitations**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | determined during the compliance emission test and as approved by the department in writing.<br>[s. NR 407.09(4)(a)1., Wis. Adm. Code]<br><br>**(5)** In order to take ammonia control equipment into account when demonstrating compliance with the requirements of I.XXX.1.a.(1) and (2), the permittee shall:<br>(a) Perform compliance emission testing to determine the ammonia control efficiency of any ammonia control device;<br>(b) Perform the compliance emission testing in accordance with the requirements of section I.ZZZ.2.;<br>(c) Monitor appropriate control device parameters as required by s. NR 439.055, Wis. Adm. Code, or other appropriate control device parameters as approved by the department, during the compliance emission testing;<br>(d) Establish normal operating ranges for control device parameters monitored as required by I.XXX.1.b.(5)(c);<br>(e) Submit a request for written department approval to use the control efficiency determined during the compliance emission test when calculating ammonia emissions according to the equations in I.XXX.1.b.(1), (2), and (4). This written request shall include, but not be limited to:<br>(i) A summary of the compliance emission test results, including the ammonia control efficiency determined during the test;<br>(ii) The control device parameters monitored during the compliance emission test, including the normal operating ranges established during the test; and<br>(iii) Calculations showing that ammonia emissions will be less than the following rates, averaged daily while operating the control device(s) within the | I.XXX.1.b.(5);<br>(e) A copy of any department approval to use ammonia control device parameter monitoring to demonstrate compliance with I.XXX.1.a.(2)(b), (c), or (d) in lieu of daily average, hourly ammonia emission calculations as allowed in I.XXX.1.b.(4);<br>(f) If complying with I.XXX.1.a.(2)(c), a copy of the information required by I.XXX.1.b.(6) and written department approval to operate at an increased ammonia emission rate; and<br>(g) If complying with I.XXX.1.a.(2)(d), a copy of the information required by I.XXX.1.b.(7) and written department approval to operate at an increased ammonia emission rate.<br>[s. NR 439.04(1)(d), Wis. Adm. Code] |

**XXX. Facility Wide Emission Limitations**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | established normal operating ranges:<br>a) 28.2 pounds per hour; or<br>b) the emission rate established using air dispersion modeling as required by I.XXX.1.b.(6), if approved by the department in writing; OR<br>c) the emission rate established using stack gas concentration measurements as required by I.XXX.1.b.(7), if approved by the department in writing.<br>[s. NR 439.075(1)(b), Wis. Adm. Code]<br><br>**(6)** If complying with I.XXX.1.a.(2)(c), the permittee shall:<br>(a) Perform a detailed air quality dispersion modeling analysis and submit the results to the department. This analysis shall be performed using AERMOD or other dispersion model approved by the department;<br>(b) Identify the ammonia emission rate, and associated stack parameters and operating conditions used in the air dispersion modeling that are necessary to ensure the ambient air concentrations off the source property are less than the concentrations allowed under column (g) of Table A of s. NR 445.07, Wis. Adm. Code;<br>(c) If the air dispersion modeling results show an increased ammonia emission rate can be allowed while the ambient air concentrations off the source property are less than the concentrations allowed under column (g) of Table A of s. NR 445.07, Wis. Adm. Code, then the permittee shall evaluate whether the increase in emissions is a modification that requires a construction permit under chapter NR 406, Wis. Adm. Code;<br>(d) If the results of the evaluation required by I.XXX.1..b.(6)(c), indicate a construction permit is required pursuant to ch. NR 406, Wis. Adm. Code, the permittee shall prepare and submit a construction | |

**XXX. Facility Wide Emission Limitations**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | permit application along with the associated application fee to the department for review;<br>(e) The permittee may not operate at an increased ammonia emission rate allowed under I.XXX.1.a.(2)(c) until either: (i) A construction permit is issued by the department if one is required; or (ii) The department provides written approval to operate at an increased ammonia emission rate, based on review of the information submitted under this condition.<br>[s. NR 407.09(4)(a)1., Wis. Adm. Code]<br><br>(7) If complying with I.XXX.1.a.(2)(d), the permittee shall:<br>(a) Measure the maximum worst-case ammonia concentration in the exhaust gas in the stack while at the same time measuring or calculating the corresponding ammonia emission rate;<br>(b) Submit the results of the ammonia stack gas concentration measurements and ammonia emission rate as determined in I.XXX.1.b.(7)(a);<br>(c) If the results of the measurements required by I.XXX.1.b.(7)(a) show an increased ammonia emission rate can be allowed while the ammonia stack gas concentration is maintained at less than the concentrations allowed under column (g) of Table A of s. NR 445.07, Wis. Adm. Code, then the permittee shall evaluate whether the increase in emissions is a modification that requires a construction permit under chapter NR 406, Wis. Adm. Code;<br>(d) If the results of the evaluation required by I.XXX.1..b.(7)(c), indicate a construction permit is required pursuant to ch. NR 406, Wis. Adm. Code, the permittee shall prepare and submit a construction permit application along with the associated application fee to the department for review; | |

**XXX. Facility Wide Emission Limitations**

| Pollutant | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | (e) The permittee may not operate at an increased ammonia emission rate allowed under I.XXX.1.a.(2)(d) until either: (i) A construction permit is issued by the department if one is required; or (ii) The department provides written approval to operate at an increased ammonia emission rate, based on review of the information submitted under this condition. [s. NR 407.09(4)(a)1., Wis. Adm. Code] | |
| **2.** Formaldehyde **(before initial operation of any Control Device C51 or C151)** | (1) * The owner or operator of a source that emits a hazardous air contaminant for which a control requirement is identified in column (i) of Table A in a quantity greater than the amount listed in column (c), (d), (e), or (f) of Table A for the contaminant shall control emissions of the contaminant to the level identified in column (i) of the table. Control requirements shall be applied according to the procedures in s. NR 445.08(2)(f), Wis. Adm. Code. [s. NR 445.07(1)(c), Wis. Adm. Code] | (1) Because the maximum theoretical formaldehyde emissions from the facility are less than the corresponding s. NR 445.07, Wis. Adm. Code, Table A value of 4,712 pounds per year for stacks that are greater than 75 feet, no further requirements are necessary to comply with ch. NR 445, Wis. Adm. Code for formaldehyde. The permittee shall maintain the records required by I.XXX.2.c.(1) to document the maximum theoretical formaldehyde emissions from the facility. [ss. NR 407.09(4)(a)1. and NR 439.04(1)(d), Wis. Adm. Code] | (1) The permittee shall maintain records to document the maximum theoretical formaldehyde emissions from the facility. [s. NR 439.04(1)(d), Wis. Adm. Code] |

## ZZZ. Conditions Applicable to the Entire Facility.

| Condition Type | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| **1.** Malfunction Prevention and Abatement Plan. | **(1)** A malfunction prevention and abatement plan shall be prepared and followed for the plant. [s. NR 439.11, Wis. Adm. Code]<br><br>**(2)** All air pollution control equipment shall be operated and maintained in conformance with good engineering practices (i.e. operated and maintained according to manufacturer's specifications and directions) to minimize the possibility for the exceedance of any emission limitations. [s. NR 439.11(4), Wis. Adm. Code]<br><br>**(3)** The facility shall submit the plan to the Department of Natural Resources, La Crosse Area Office Air Program, 3550 Mormon Coulee Road, Room 104, La Crosse, WI 54601, phone (608) 785-9000, for review and approval whenever this plan is updated or revised. The department may amend the plan if deemed necessary for malfunction prevention or for the reduction of excess emissions during malfunctions. [s. NR 439.11(2), Wis. Adm. Code] | **(1)** The malfunction prevention and abatement plan shall be developed to prevent, detect and correct malfunctions or equipment failures which may cause any applicable emissions limitation to be violated or which may cause air pollution. [s. NR 439.11(1), Wis. Adm. Code]<br><br>**(2)** This malfunction prevention and abatement plan shall include installation, maintenance and routine calibration procedures for the process monitoring and control equipment instrumentation. This plan shall require an instrumentation calibration at the frequency specified by the manufacturer, yearly or at a frequency based on good engineering practice as established by operational history, whichever is more frequent. Inspection and calibration shall also be conducted whenever instrumentation anomalies are noted. [ss. NR 407.09(1)(c)1.c., NR 439.055(4) and s. NR 439.11, Wis. Adm. Code]<br><br>**(3)** The malfunction prevention and abatement plan shall require a copy of the operation and maintenance manual for the control equipment to be maintained on site. The plan shall contain all of the elements in s. NR 439.11(1)(a) – (h), Wis. Adm. Code. [s. NR 439.11, Wis. Adm. Code] | None Applicable. |
| **2.** Stack Testing Requirements. | **(1)** If any required compliance emission test(s) cannot be conducted within the time frames specified in this permit, the permit holder may request and the Department may approve, in writing, an extension of time to conduct the test(s). [s. NR 439.07, Wis. Adm. Code]<br><br>**(2)** All testing shall be performed with the | **(1)** Two copies of the report on any compliance emission tests shall be submitted to the Department for evaluation within 60 days following the completion of tests. [s. NR 439.07(9), Wis. Adm. Code] | None Applicable. |

**ZZZ. Conditions Applicable to the Entire Facility.**

| Condition Type | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | emissions unit operating at capacity or as close to capacity as practicable and in accordance with approved procedures. If operation at capacity is not feasible, the source shall operate at a capacity level which is approved by the Department in writing. [s. NR 439.07(1), Wis. Adm. Code]<br><br>**(3)** The Department shall be informed at least 20 working days prior to any stack testing, so a Department representative can witness the testing. At the time of notification, a compliance emission test plan shall also be submitted to the Department for approval. When approved in writing, an equivalent test method may be substituted for the reference test method. The notification and test plan shall be submitted to the Department of Natural Resources, La Crosse Area Office Air Program, 3550 Mormon Coulee Road, Room 104, La Crosse, WI 54601, phone (608) 785-9000. [s. NR 439.07(2), Wis. Adm. Code] | | |
| **3.** Compliance Reports/Records. | **(1)** The permittee shall submit periodic monitoring reports. [s. NR 407.09(1)(c)3., Wis. Adm. Code]<br><br>**(2)** The permittee shall submit periodic certification of compliance. [s. NR 407.09(4)(a)3., Wis. Adm. Code]<br><br>(3) After initial operation of each Control Device C51 and C151, the permittee shall submit periodic excess emission reports | **(1)** The permittee shall submit a monitoring report which contains the results of monitoring or a summary of monitoring results required by this permit to the Department every six (6) months.<br>(a) The time periods to be addressed by the submittal January 1 to June 30 and July 1 to December 31.<br>(b) The report shall be submitted to the Department of Natural Resources, La Crosse Area Office Air Program, 3550 Mormon Coulee Road, Room 104, La Crosse, WI 54601, phone (608) 785-9000, within 45 days after the end of each reporting period. | None Applicable. |

ZZZ. **Conditions Applicable to the Entire Facility.**

| Condition Type | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | required by conditions. I.E´.7.c.(3) and I.J´7.(3), respectively.<br><br>**(4)** The records required under this permit shall be retained for at least five (5) years and shall be made available to department personnel upon request during normal business hours. [s. NR 439.04, s. NR 439.05, Wis. Adm. Code] | (c) All deviations from and violations of applicable requirements shall be clearly identified in the submittal.<br>(d) Each submittal shall be certified by a responsible official as to the truth, accuracy and completeness of the report.<br>(e) The content of the submittal is described in item D. of Part II of the operation permit.<br>[ss. NR 407.09(1)(c)3. & NR 439.03(1)(b), Wis. Adm. Code]<br><br>**(2)** The permittee shall submit an annual certification of compliance with the requirements of this permit to the Department of Natural Resources, La Crosse Area Office Air Program, 3550 Mormon Coulee Road, Room 104, La Crosse, WI 54601, phone (608) 785-9000, and to Compliance Data – Wisconsin, Air and Radiation Division, US EPA, 77 W. Jackson Street, Chicago, IL 60604.<br>(a) The time period to be addressed by the report is January 1 to December 31 of the preceding year.<br>(b) The report shall be submitted to the Wisconsin Department of Natural Resources La Crosse Area Office Air Program and the US EPA within 45 days after the end of each reporting period.<br>(c) The information included in the report shall comply with the requirements of Part II, Section N of this permit.<br>(d) Each report shall be certified by a responsible official as to the truth, accuracy and completeness of the report.<br>[ss. NR 407.09(4)(a)3. & NR 439.03(1)(c), Wis. Adm. Code]<br><br>(3) The quarterly excess emission reports required by conditions I.E´.7.c.(3) and I.J´.7.c.(3) shall:<br>(a) Be submitted to the Department of Natural Resources, | |

**ZZZ. Conditions Applicable to the Entire Facility.**

| Condition Type | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | | La Crosse Area Office Air Program, 3550 Mormon Coulee Road, Room 104, La Crosse, WI 54601, phone (608) 785-9000, within 30 days following the end of each calendar quarter.<br>(b) Contain the following information:<br>(i) The date and starting and ending times or duration of each period of excess emissions;<br>(ii) The periods of excess emissions that occur during startups, shutdowns, soot blowing, control equipment malfunction, process malfunction, fuel problems, other known causes or for unknown causes;<br>(iii) The cause of any malfunction and the measures taken to reduce excess emission;<br>(iv) The date and starting and ending times of any period during which the monitoring system was inoperative for and reason or causes, including monitor malfunction or calibration, except zero and span checks. The report shall identify the repairs or adjustments made to the system;<br>(v) The date and starting and ending time of an period during which the process being monitored was inoperative;<br>(vi) When no period of excess emission occurred during the quarter and the monitoring system had no period of downtime, an excess emission report shall be filed stating such information.<br>**[ss. NR 407.09(2)(d), NR 439.09(10) and NR 439.09(10)(a), Wis. Adm. Code, Permit # 12-MHR-176]** | |
| 4. Construction Permit 12-MHR-176 Transitional Language | **(1) Notifications.** The permittee shall inform the Department of the date each Control Device C51 and C151 becomes operational.<br><br>For purposes of this permit, "operational" shall be defined as the first time of any | (1) Notifications. The permittee shall submit to the Department of Natural Resources, West Central Region Air Program, LaCrosse Area Office in writing, within 15 days of the date when each Control Device C51 and C151 becomes operational. **[s. NR 439.04(1)(d), Wis. Adm. Code (Permit 12-MHR-176)]** | None Applicable. |

ZZZ. **Conditions Applicable to the Entire Facility.**

| Condition Type | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | process related air contaminant is emitted into the ambient air.<br><br>**[s. NR 439.03(1), Wis. Adm. Code (Permit 12-MHR-176)]**<br><br>**(2) Construction Authorization Expiration.** The Authorization to Construct, under Construction Permit 12-MHR-176 expires 18 months after the date of issuance. Construction or modification and an initial operation period for equipment shakedown, testing and Department evaluation of operation to assure conformity with the permit conditions is authorized for each emissions unit covered in this permit. Please note that the sources covered by this permit are required to meet all emission limits and conditions contained in the permit at all times, including during the initial operation period. If 18 months is an insufficient time period for construction or modification, equipment shakedown, testing and Department evaluation of operation, the permit holder may request and the Department may approve in writing an extension of this permit. The conditions of the construction permit are permanent, unless revised, superseded or revoked. **[ss. 285.60(1)(a)2. and 285.66(1), Wis. Stats., and s. NR 406.12, Wis. Adm. Code (Permit 12-MHR-176)]**<br><br>**(3) New Control Devices C51 and C151:** Once constructed and initially operating | (2) **Malfunction Prevention and Abatement Plan.** The owner or operator shall update the facility's Malfunction Prevention and Abatement Plan to include the Control Devices C51 and C151within 60 days of the date each control device becomes operational. **[s. NR 439.11(1), Wis. Adm. Code (Permit 12-MHR-176)]**<br><br>(3) **Emission Stack Testing.** Upon completion of any required compliance emission tests on Stack S50 and S150, the permittee shall submit to the Department of Natural Resources, West Central Region Air Program, LaCrosse Area Office two copies of the report on the tests for evaluation within 60 days of the date the tests were completed. **[s. NR 439.04(1)(d), Wis. Adm. Code (Permit 12-MHR-176)]**<br><br>(4) **Submittal of Compliance Testing Information and other updates.** The permittee shall submit to the department any updates of the permit application. Updates are required if any changes that occur which are not specified or described in the plans and specifications dated August 17, 2012, , September 10, 2012, September 13, 2012, October 5, 2012, and October 19, 2012, October 25, 2012, October 31, 2012, November 15, 2012, December 5, 2012, and February 6, 2013. The updates shall be made within 60 days of the date of the change. Other information to be submitted shall include the notification requirements and stack tests results. The continued operation of Control Devices C51 and C151) addressed in this construction permit are prohibited once the authorization to construct expires per Condition ZZZ.4.a.(2), unless any required updates have been submitted and the permittee has satisfied the notification requirements of Condition ZZZ.4.b.(1). **[s. NR 439.04(1)(d), Wis. Adm. Code (Permit 12-MHR-176)]** | |

ZZZ. **Conditions Applicable to the Entire Facility.**

| Condition Type | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | each Control Device C51 and C151 shall operate under the conditions in Section I.E´ and I.J´. of construction permit 12-MHR-176. **[s. NR 439.03(1), Wis. Adm. Code (Permit 12-MHR-176)]**<br><br>**(4) Malfunction Prevention and Abatement Plan.** The permittee shall update the facility's Malfunction Prevention and Abatement Plan to include the operation and maintenance of Control Devices C51 and C151. **[s. NR 439.11, Wis. Adm. Code (Permit 12-MHR-176)]**<br><br>**(5) Emission Stack Testing.** The permittee shall conduct a compliance emission stack tests of Stacks S50 and S150 within the timeframes specified in Section I.E´ and I.J´. of construction permit 12-MHR-176.<br><br>(a) If compliance emission test(s) cannot be conducted within the time frames specified, the permit holder may request and the Department may approve, in writing, an extension of time to conduct the test(s).<br><br>(b) All testing shall be performed with the emissions unit operating at capacity or as close to capacity as practicable and in accordance with approved procedures. If operation at capacity is not feasible, the source shall operate at a capacity level which is approved by the Department in writing. | (5) **Submittal of Malfunction Prevention and Abatement Plan.** The permittee shall update the facility's Malfunction Prevention and Abatement Plan to include the operation and maintenance Control Devices C51 and C151. **[s. NR 439.04(1)(d), Wis. Adm. Code (Permit 12-MHR-176)]**<br><br>(6) All submittals described in this permit shall be made in writing and include the name of the facility, the facility's address, the construction permit number and a description of the affected emission unit(s). **[s. NR 439.04(1)(d), Wis. Adm. Code (Permit 12-MHR-176)]** | |

ZZZ. **Conditions Applicable to the Entire Facility.**

| Condition Type | a. Limitations | b. Compliance Demonstration | c. Reference Test Methods, Recordkeeping and Monitoring Requirements |
|---|---|---|---|
| | (c) The Department shall be informed at least 20 working days prior to any stack testing so a Department representative can witness the testing. At the time of notification, a compliance emission test plan shall also be submitted to the Department for approval. When approved in writing, an equivalent test method may be substituted for the reference test method.<br><br>**[s. NR 439.07, Wis. Adm. Code (Permit 12-MHR-176)]**<br><br>**(6) Completion of Operation Permit Application.** The permittee shall update the permit application if any changes occur which are not specified or described in the plans and specifications approved under construction permit 12-MHR-176. **NR 407.04(1)(b), Wis. Adm. Code (Permit 12-MHR-176)]** | | |

## PART III

COMPLIANCE ASSURANCE MONITORING (CAM) PLANS

Processes emitting to control device C20, stack S20 (Plant #1), for PM emissions – Attached.
Processes emitting to control device C50, stack S50 (Plant #1), for VOC emissions – Attached.
Processes emitting to control device C120, stack S120 (Plant #2), for PM emissions – Attached.
Processes emitting to control device C150, stack S150 (Plant #2), for VOC emissions – Attached.
Processes emitting to control device C51, stack S50 (Plant #1), for VOC, phenol, and formaldehyde emissions – Attached.
Processes emitting to control device C151, stack S150 (Plant #2), for VOC, phenol, and formaldehyde emissions – Attached.